

PATENT

Appl. No. 10/057,280
Amdt. dated November 13, 2003
Amendment under 37 CFR 1.116 Expedited Procedure
Examining Group

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. - 11. (Canceled).
12. (previously presented) An apparatus for forming a material on a semiconductor wafer, the apparatus comprising:
 - a processing chamber defined by walls;
 - a wafer support positioned within the processing chamber and configured to receive a semiconductor wafer;
 - a processing gas supply; and
 - a gas distribution showerhead overlying the wafer support and including a tapered face plate proximate to the wafer support, an edge of the tapered face plate exhibiting a reduced thickness relative to a thickness of a center of the face plate to create a taper angle, such that material deposited on a wafer in contact with the wafer support exhibits a uniform center-to-edge thickness, the tapered faceplate further comprising,
 - an inlet portion configured to receive a flow of a processing gas, the inlet portion comprising an aperture having a width, and
 - an outlet portion configured to convey the processing gas flow to a semiconductor wafer, the outlet portion comprising an elongated slot in fluid communication with the aperture.
13. (Original) The apparatus of claim 12 wherein the taper angle is between about 0.5° and 5°.
14. (Canceled).
15. (previously presented) The apparatus of claim 12, wherein the elongated slot has a length at least one-half a thickness of the face plate.
16. (previously presented) The apparatus of claim 12 wherein the elongated slot is circular and continuous.

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17. (previously presented) The apparatus of claim 12 wherein a width of the elongated slot is greater than the width of the aperture.

18. (Original) The apparatus of claim 17 wherein the width of the elongated slot is at least 2.25x larger than the width of the aperture.

19. - 27. (Canceled).

28. (Original) An apparatus for forming a material on a semiconductor wafer, the apparatus comprising:

a processing chamber defined by walls;

a wafer support positioned within the processing chamber and configured to receive a semiconductor wafer;

a processing gas supply; and

a gas distribution showerhead overlying the wafer support and including a tapered face plate proximate to the wafer support, the tapered face plate comprising,

an inlet portion configured to receive a flow of a processing gas, the inlet portion comprising an aperture having a width, and

an outlet portion configured to convey the processing gas flow to a semiconductor wafer, the outlet portion comprising an elongated slot in fluid communication with the aperture,

wherein an edge of the tapered face plate exhibits a reduced thickness relative to a thickness of a center of the face plate to create a taper angle, such that material deposited on a wafer in contact with the wafer support exhibits a uniform center-to-edge thickness.

29. (Original) The apparatus of claim 28 wherein the taper angle is between about 0.5° and 5°.